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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/489,954	01/24/2000	Pierre C. Fazan	303.434US2	6507

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EXAMINER

KANG, DONGHEE

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 02/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/489,954

Applicant(s)

FAZAN ET AL.

Examiner

Donghee Kang

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-57 and 88-92 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39-57 and 88-92 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Acknowledgment

1. Applicant's Response to Paper No.12 has been entered and made of Record.

Claims 39-57 & 88-92 are pending in this Office Action.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim **45** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "*a diffusion layer prohibiting diffusion of atoms between said first and said second portions*" is misdescriptive. The second portions should be change to "third portions".

Claim Rejections - 35 USC § 102

4. Claims **39-57 & 88-92** are rejected under 35 U.S.C. 102(e) as being anticipated by Fazan et al. (US 5,392,189).

Fazan et al discloses an electrode comprising (Fig.15B):

a contact (65) formed in an insulative layer (40 & 83); a diffusion barrier layer (75) overlying said contact, said insulative layer surrounding a sidewall of said diffusion barrier portion; an oxidation resistant layer (85) overlying said diffusion barrier layer (75), extending above and below an upper surface of insulative layer, and including a recess, said diffusion barrier portion configured to inhibit diffusion of atoms between

said contact and said oxidation resistant portion; dielectric layer (90) overlying said oxidation resistant layer; a cell plate electrode (91) overlying said dielectric layer; and a reducing contact resistance layer (67) interposed between said contact (65) and said diffusion barrier layer (75), said reducing contact resistance portion configured to reduce a contact resistance between said contact and said diffusion barrier portion, wherein contact, diffusion barrier, oxidation resistance, and reducing contact resistance layer consist of polysilicon, tantalum, platinum, and titanium silicide.

5. Claims **39-47, 56-57, & 88-92** are rejected under 35 U.S.C. 102(e) as being anticipated by Nishioka et al. (US 5,489,548).

Regarding claims **39, 42-46, 56-57, & 88-92**, Nishioka discloses an electrode comprising (Fig.13-14):

a first portion 54 formed in an insulative layer 32, wherein said first portion is a silicon contact; a second portion 36 (diffusion barrier portion, TiN or Ta) overlying the first portion, wherein said insulative layer surrounds a sidewall of said second portion; a third portion 42 (oxidation resistant portion, Pt) overlying said second portion, extending above and below an upper surface of said insulative layer, and including a recess , wherein said first portion and said second portion are different materials; wherein the second portion (a diffusion barrier layer) inhibits diffusion of atoms between said first (contact) and said third portions (oxidation resistant portion); a fourth portion 34 (reducing contact resistance portion) interposed between said first (contact) and said second portions (diffusion barrier), wherein the fourth portion reduces contact resistance

between said first and said second portions. *See also Col.5, lines 40-44, Col.7, lines 12-40, and Table.*

Regarding claim **40**, Nishioka discloses the second portion (TiN) and said third portion (Pt) are different materials.

Regarding claim **47**, Nishioka discloses the insulative layer surrounds a lower sidewall of said third portion.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims **48-55** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishioka et al. in view of Kaga et al. (IEEE Electron Devices, Vol.38 (2), 1991, pp 255).

Nishioka teaches substantially the entire claimed structure, as applied to claims 39, 56, 90, & 92 as explained above, except for including a transistor to form a dynamic random access memory device. It, however, is well known and also taught by Kaga forming high density DRAM's (See Fig.8) which includes a crown-shaped capacitor and transistor. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to have both the capacitor and the transistor in the DRAM's in order to generate the information and store the information in the memory device.

Response to Arguments

8. Applicant argues that an effective filing date is April 2, 1993 for this application (Serial No. 09/489,954) because this application is a divisional of U.S. Serial No. **08/572,392** filed 12/14/95 which is a continuation in part of U.S. Serial No. **08/390,336** filed 02/17/95 which is a continuation of U.S. Serial No. 08/044,331 filed 04/02/1993. The Examiner respectfully disagrees because a U.S. Serial No. **08/572,392**, which is parent application of this pending application has a new subject matter, for example, a *fourth portion* interposed between a first and second portion. Thus the effective date of this pending application is **12/14/95** but not 04/02/93.

When applicant files a continuation-in-part whose claims are not supported by the parent application, the effective filing date is the filing date of the child CIP. Any prior art disclosing the invention or an obvious variant thereof having a critical reference date more than 1 year prior to the filing date of the child will bar the issuance of a patent under 35 U.S.C. 102(b). *Paperless Accounting v. Bay Area Rapid Transit System*, 804 F.2d 659, 665, 231 USPQ 649, 653 (Fed. Cir. 1986). See MPEP 2133.01

9. Applicant's arguments with respect to claims 39-57 & 88-92 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

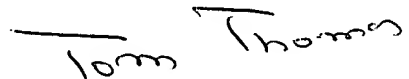
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghee Kang whose telephone number is 703-305-9147. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 703-308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



TOM THOMAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Donghee Kang, Ph.D.
January 29, 2002